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ABSTRACT

The diverse skills and technologies necessary to achieve high levels of artistic and technical quality in audio book production are called audio book art and science. This document explains the principles of audio book art and science and is divided into three sections: "Communication Art in Audio Book Production," "Science in Audio Book Production," and "Position Descriptions for Audio Book Production Staff." The first section focuses on narration as a communication art. Voice, speech, language, and narration skill are highlighted as the primary components of narration. The physical, mental, and artistic enhancing factors of narration are described and the importance of correct pronunciation is noted. A list of criteria for evaluating an audio book original master recording follows. The next section discusses narration and host environments, ideal ventilation and quality of lighting, and specifications for original master recordings and running masters (composite recordings made from two consecutive original masters). Examples of quality assurance and quality control methods are also provided. The last section describes the purpose, amount of supervision received, requirements, and responsibilities for the narrator, monitor, and reviewer. (AEF)

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The Art and Science of Audio Book Production

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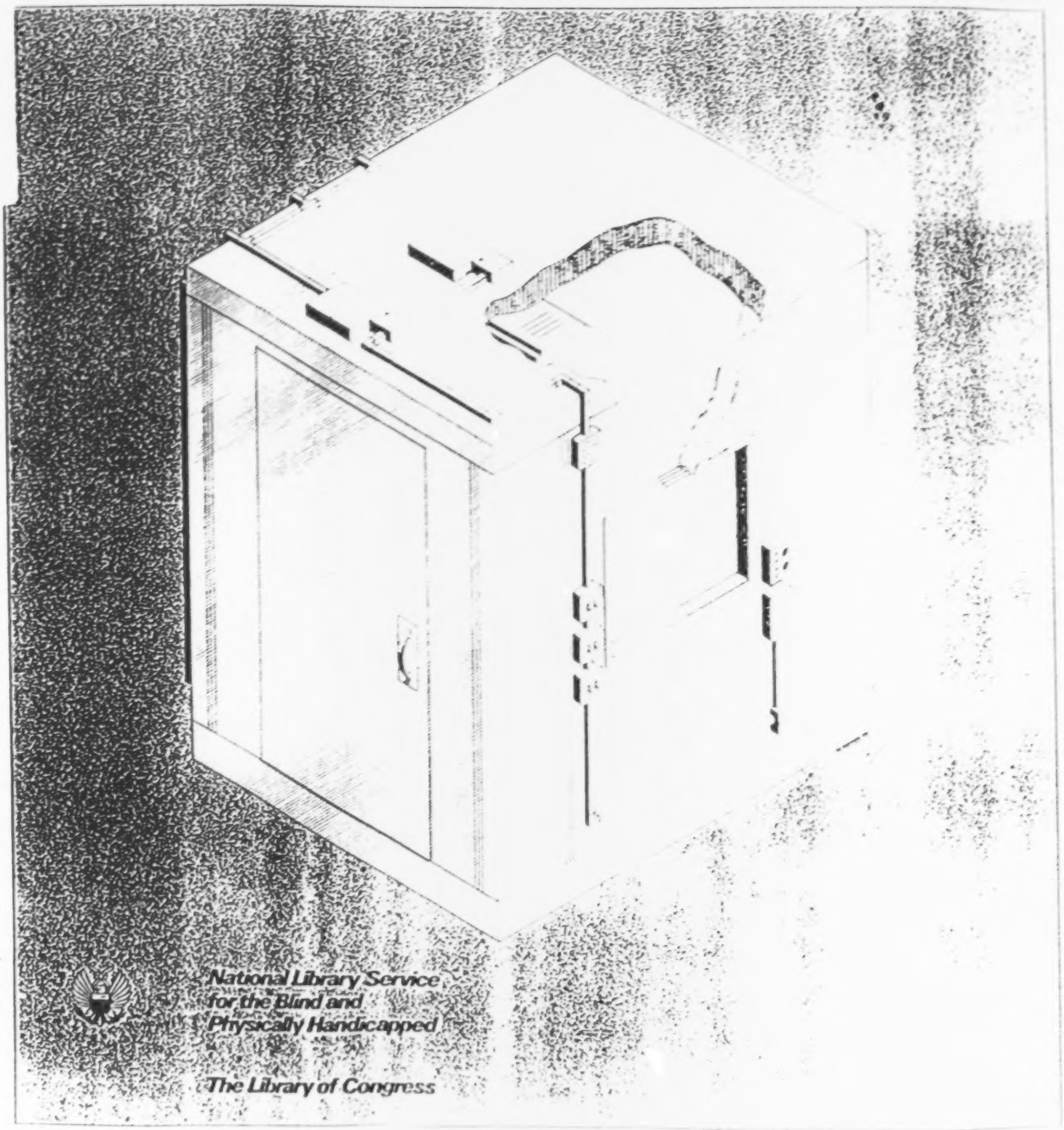

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Introduction

Over the years, many organizations have begun audio book production programs. Some have been successful, some have not advanced beyond the novice level, and some have failed completely. The diverse skills and technologies necessary to achieve high levels of artistic and technical quality in audio book production are called audio book art and science. Many elements, such as good staff, equipment, and facilities, are important in determining quality of the final product; but the most important is how well the principles of audio book art and science are understood and applied.

Communication Art in Audio Book Production

Narration as Communication Art

It has often been said that narrating an audio book is an art, and to a great extent that is true. Narration is an art form related to acting and oral interpretation, but is neither. Rather, it is a niche in the performing arts that blends some elements of both. Ideally, narration is translating the written word to the spoken word in a way that is as consistent as possible with the intent of the author. At the least, it is translating the written word to the spoken word in a way that is intelligent and agreeable to the listener. The task of reading aloud for the purpose of producing an audio book original master recording is called narration, and the person who performs the task of narration is called a narrator. Narrators are also frequently called readers because, after all, their task is reading aloud.

As a narrator, the late William Arthur Deacon, Toronto literary critic, tried to make himself "into a panel of glass through which the reader could see the book as if he held it in his own hands." Reading aloud, like singing, is something many people do, but only a few do well. Both require a good voice, a talent for using the voice, and a native ability to apply that talent effectively. The art of narration can be taught only to the extent of giving basic guidelines and techniques to one who has a talent for it. If talent is present, it can be enhanced, but if talent is not present, it cannot be taught. Good narration is a composite of four primary components and several enhancing factors.

Primary Components of Narration

Voice

The most important attributes of the voice, with respect to narration, are acoustical, strength, and stamina. The voice must have good clarity and be free of any acoustical characteristic that might become a distraction. It must have strength sufficient to generate sound levels necessary to achieve clean, clear recordings of the voice. Stamina must be sufficient for the duration of a recording session with no audible tiring and no audible degradation in narration effectiveness.

Knowledge of how to effectively generate, modulate, and manipulate the voice and the ability to apply that knowledge are as important as any attribute of the voice itself.

Speech

The most important attributes of speech, with respect to narration, are its acoustical characteristics. Speech must be clear, easily understood, and free of any elements that might become a distraction. Knowledge of how to effectively generate, modulate, and manipulate speech and the ability to apply that knowledge are as important as any attribute of speech.

All normal speech has some degree of regional and cultural coloration, as well as coloration that is characteristic to the individual. These factors usually do not cause problems in understanding between individuals who have similar speech coloration, but understanding can be affected if the colorations are sufficiently different.

The middle area among coloration extremes is a speech blend easily understood by a majority of people. This middle-area blend that encompasses the most common speech colorations is mainstream speech. It has coloration, but not to a degree that interferes with ease of understanding. Mainstream speech blends can be rich in a variety of colorations and still have the clarity and fluency that make understanding easy and effortless.

Language

The most important attributes of language, with respect to narration, are in-depth knowledge of and fluency in the language in which the text is printed. Knowledge of the language and the ability to apply that knowledge are as important as any attribute of voice and speech.

Narration Skill

Narration skill, as with skill in other arts, has many elements. Foremost among these elements are a natural sensitivity to the meanings of words and phrases and the ability to recognize nuances and shadings in the written word. These are the most basic elements necessary to achieve good narration, and there are no substitutes for them. Among other essential elements of good narration are a talent for using voice, speech, and language and a native ability to blend language sensitivity with talent. These elements combine with

experience, training, and education to enable what is termed narration skill to emerge.

Knowledge of speech arts and the ability to apply that knowledge form the cement that bonds voice, speech, and language together in verbal performance. Good narration requires an ability to achieve a level of verbal performance that conveys the style, mood, tempo, and sense of the text to the listener. Equally important is the ability to maintain consistent narration style throughout a recording session and to maintain continuity of that style from session to session.

Enhancing Factors of Narration

The categories of enhancing factors are physical, mental, and artistic. An example of a physical enhancing factor is good coordination of muscles that control eye scanning across the page. An example of a mental enhancing factor is good memory retention of the final line of text on a page. This ability helps maintain continuity of narration when turning pages. An example of an artistic enhancing factor is good verbal punctuation. It is print punctuation, intended for the eye, that gives intelligence and coherence to the printed text; but it is verbal punctuation, intended for the ear, that gives intelligence and coherence to the spoken text. Each primary component and enhancing factor has variables that combine to influence perception of narrator effectiveness.

Accuracy of Pronunciation and Narration

The deficiencies most frequently cited in the review of audio book original master recordings are errors in pronunciation and narration. The spoken text must be a word-for-word rendition of the printed text, and the importance of accuracy in pronunciation and narration cannot be overstated.

Correct pronunciation in a recorded book is the equivalent of correct spelling in a print book. Pronunciation must be appropriate to the style and period of the text and to the nature of the characters. Proper names, foreign words, and phrases in a foreign language must be pronounced with accuracy and delivered with naturalness without breaking the rhythm of narration.

A wide range of authoritative reference sources should be available for use by the audio book production staff. Specialized reference works (music, law, medicine, etc.) may be used for specialized requirements. If published sources do not give the needed pronunciations, additional research must be conducted to the extent necessary to determine correct pronunciation.

The deficiencies most commonly cited with respect to narration accuracy are errors that make the spoken text fail to conform to the printed text, narration errors that change the meaning of the printed text, and narration that imposes personal bias in presenting the printed text.

Evaluation of Narration

Among many elements that must be considered when the narration of an audio book original master recording is evaluated, the following are judged to be the most important:

- The narration skillfully conveys the sense of the text to the listener at all times, including the emotional level and other elements appropriate to the needs of the text.

- The narration distinguishes narrative form from dialogue and characters from each other through effective use of timing, stress, emphasis, inflection, and other appropriate skills of the speech arts; and all character voices possess the same ease, flow, and vocal range as the normal narrative voice.

- The narration is free of strained, unclear, inconsistent, or overplayed accents, dialects, or character interpretations.

- The narration is accomplished in a conversational manner free of stilted, mechanical, monotonous, or repetitive patterns of delivery that are not called for in the text.

- The narration is accomplished at a pace that is appropriate to the needs of the text.

Science in Audio Book Production

Many technologies are needed for audio book production, among which are the technologies of acoustics, mastering, duplicating, lighting, and ventilation. The technical quality of the final product is affected by how well these technologies are understood and applied.

Narration Environments

A narration environment is the environment in which a narrator is located during recording sessions. It is a room or free-standing enclosure that meets physical, acoustical, electrical, lighting, and ventilation requirements considered important for the task of narration. A manufactured, prefabricated product used as a narration environment is called a sound-isolating enclosure. This term is used in lieu of booth or studio, but all three terms refer to the same generic product.

Enclosures used as narration environments must be protected from outside noise because all enclosures, manufactured or constructed, have finite sound isolation. Sound isolation is the degree of acoustical separation between two locations; the degree of isolation for a sound-isolating enclosure is the difference between sound levels outside and sound levels inside.

A typical enclosure used as a narration environment is a single-wall enclosure, and the sound isolation it provides is modest at best. The only difference between a single-wall and double-wall enclosure of the same manufacture, other than cost, is the degree of sound isolation. "Soundproof" is a misnomer for such enclosures, because they cannot provide infinite sound isolation.

Host Environments

A host environment is the site in which an enclosure used as a narration environment is located. Host environment size can vary from a small area that accommodates only one enclosure to a large area that accommodates several enclosures.

A quiet host environment is important because it protects enclosures used as narration environments from outside noise. It is also the work site for monitors and frequently the work site for reviewers. The task of monitoring and reviewing requires continuous, concentrated attention to acoustical details, and noise in the host environment affects how well that task can be accomplished.

The host environment should be free from airborne noise and structure-borne noise. Airborne noise is noise that travels between two locations through the atmosphere. Structure-borne noise is vibration that travels between two locations through structural components of the building, such as beams and girders, and radiates from the floor, walls, and ceiling into the atmosphere as airborne noise.

Among the most common sources of airborne noise in host environments are ballasts in fluorescent light fixtures, air diffusers, and ventilation ducts. Among the most common sources of vibration in buildings from which structure-borne noise can originate and from which the host environment should be isolated are elevators, central air handling equipment, and boiler rooms.

A host environment must have a floor that is level, firm, and well supported and must provide adequate clear space for each enclosure. Clear space is the distance between any vertical surface in the host environment and the greatest protrusion on the side of an enclosure. Examples of vertical surfaces in a host environment are walls, support pillars, or other enclosures. An example of a side protrusion is a side-mounted fan silencer. The following clear space should be available for each enclosure in a host environment:

- Clear space of not less than twenty-four inches between any vertical surface in the host environment and the enclosure;
- Clear space that allows a full arc for door opening; and
- Clear space adjacent to the enclosure window for a monitor work area with easy entry and exit.

Ventilation and Lighting

Narration and host environments should be cool, dry, and well ventilated. The air supply should be well filtered because clean air is important for the comfort and well-being of production staff, as well as for reliability of mastering and review equipment.

Most enclosures used as narration environments are not connected to the heating, ventilating, and air-conditioning system of the building but have a ventilation system mounted on the enclosure's exterior. This system uses fans to pull air from the host environment, move it through the enclosure, then exhaust it back into the host environment. Temperature and humidity inside the enclosure are maintained at the ambient temperature and humidity of the host environment, provided there is adequate air flow through the enclosure.

The quality of lighting in narration and host environments is important because the work of narrators, monitors, and reviewers is sight intensive, and many problems with print quality can be ameliorated with good lighting. Full-spectrum light is recommended when working intensively with print material for an extended period of time.

Original Masters

Production

NLS specifications require the original master recordings of book titles intended for cassette duplication to have sound tracks of eighty-eight minutes duration. The two exceptions to this requirement are the final sound track of a book and a book that requires a sound track of fewer than eighty-eight minutes duration for the entire recorded text. Original masters are recorded on open-reel tapes at 3.75 inches per second with a half-track format. This is a practical combination for producing high quality original masters at reasonable cost for the following reasons:

- Aberrations in tape oxide coating can cause signal breakup, distortion, and dropout. A minor aberration that is quite audible in a quarter-track recording may not be audible in a half-track recording made on the same tape. The sound track made by a half-track record head is ninety-one percent wider than the sound track made by a quarter-track record

head. It has more oxide recorded with the same signal than a quarter-track recording, so minor aberrations are less audible.

- Signal to noise ratio (S/N) is a comparison of the level of the recorded signal to the level of noise inherent in the recording process, such as noise from tape oxide and record electronics. S/N is affected by sound track width and tape speed. As a rule, the wider the sound track and the faster the tape speed, the greater the S/N. As sound track width and tape speed decrease, so does S/N. A full-track recording has the best S/N when compared to half-track and quarter-track recordings, and quarter-track recordings have the lowest S/N.

The typical original master has two sound tracks, and two consecutive masters are needed to produce a four-track cassette.

Production Time versus Listening Time

A production team, which consists of a narrator, a monitor, and a reviewer, typically requires 5.5 staff hours to produce each hour of error-free recorded text. Each hour of finished sound track typically requires not less than 2 hours of studio time to produce; that requires 2 hours for a narrator and 2 hours for a monitor working together as a team for a total of 4 staff hours. The reviewer requires not less than 1.5 hours to review each hour of sound track because notes must be prepared to identify errors for correction by the narrator–monitor team. The total time contributed by all three team members yields the 5.5 staff hours necessary to produce each hour of error-free recorded text. Thus, the typical two-track original master with just under 3 hours of listening time requires not less than 16.5 staff hours to produce.

Running Masters

A running master is a composite recording made from two consecutive original masters. It has a four-track format and can be a cassette or open-reel tape. Running masters should be the signal source for general duplicating purposes, rather than original masters, so that original masters are not put at risk.

Running masters are usually made on a custom-engineered duplicating system. Two consecutive original masters are played simulta-

neously on twin half-track, two-channel master decks. The output from the two master decks is fed to a four-channel copy transport to produce a running master.

The three versions of this system used in the field to produce running masters are

- RRX—open-reel masters to open-reel copy
- RCX—open-reel masters to cassette copy
- CCX—cassette masters to cassette copy

Ensuring Quality

The use of quality assurance and quality control methods and procedures should be standard practice in all facets of audio book production. Quality assurance is a collection of methods and procedures established to identify potential problems and prevent them from occurring. Quality control is a collection of methods and procedures established to identify finished products that do not meet requirements and prevent them from circulating to consumers. Quality assurance is problem avoidance and quality control is problem detection.

Examples of quality assurance methods and procedures are requiring all narrator candidates to pass a narration audition to qualify to be a narrator; having available appropriate reference materials for all staff involved in original master recording production; using good quality tape products for original masters, running masters, and cassette copies; and frequent, thorough cleaning of tape transports for all mastering, reviewing, and duplicating equipment.

Examples of quality control methods and procedures are completely reviewing all original master recordings for artistic and technical quality; checking all running masters for technical quality before they are used to duplicate copies; and checking all cassette copies for technical quality before they are circulated to consumers.

An example of a production practice that encompasses both quality assurance and quality control is the use of running masters for general duplicating purposes.

Position Descriptions for Audio Book Production Staff

Narrator

Purpose

The narrator translates the written word to the spoken word in a way that is as consistent as possible with the intent of the author.

Supervision Received

The narrator works under the supervision of the studio director, who assigns tasks, sets priorities, and provides guidance on matters of studio policy.

Requirements

- Good vision and hearing.
- Ability to pass a narration audition.
- Fluency in the language in which the text is printed.
- Ability to work well with others and to accept critiques from the monitor, reviewer, and studio director.
- Discipline to achieve and maintain consistent narration performance for all recording sessions.
- Ability to use dictionaries and other reference sources.

Responsibilities

The narrator is responsible for

- Achieving a presentation that conveys the artistic, emotional, and intellectual range of the text.
- Conveying the sense of the text by handling the narration in the manner most appropriate to the needs of the text.

- Ensuring correct pronunciation, which requires research in applicable sources as well as judging when common usage should take precedence over correct dictionary pronunciation, especially in novels.

- Handling characterization appropriately and consistently, without underplaying or overplaying.

- Narrating the text without commenting on attitudes and opinions expressed by the author.

- Achieving and maintaining a presentation that is consistent throughout all recording sessions.

- Writing accurate, concise descriptions for illustrations, graphs, charts, and tables when such graphic elements appear in the text.

Monitor

Purpose

The monitor controls all technical operations during a recording session, thus allowing the narrator to devote full attention and effort to the task of narration.

Supervision Received

The monitor works under the supervision of the studio director, who assigns tasks, sets priorities, and provides guidance on matters of studio policy.

Requirements

- Good vision and hearing.

- Good ear–eye–hand coordination.

- Ability to learn to operate the recording equipment correctly and sufficient dexterity to perform those operations.

- Ability to work well with others and to accept critiques from the narrator, reviewer, and studio directior.

- An artistic sense for spoken language and the ability to work with problems related to translating printed text to spoken communication.

- Fluency in the language in which the text is printed.

- Ability to use dictionaries and other reference sources.

Responsibilities

- Working with the narrator to achieve a recording of high artistic and technical quality.

- Ensuring that the sound track is free from audible noise.

- Ensuring that the text is accurately narrated and all edits are clean and undetectable.

- Ensuring that the segments of sound track with corrections to the recorded text are acoustically identical to the rest of the recording.

Reviewer

Purpose

The reviewer ensures the artistic and technical quality of recordings by reviewing them for adherence to established procedures. The reviewer is the third member of the production team and cannot have been involved with the narration or monitoring of the master recording being reviewed. This requirement assures a different ear for the review process. The reviewer is a full participant in quality assurance procedures of master recording production.

Supervision Received

The reviewer works under the supervision of the studio director, who assigns tasks, sets priorities, and provides guidance on matters of studio policy.

Requirements

- Good vision and hearing.

- Ability to listen effectively.

- Ability to communicate effectively in writing and orally.
- Ability to work well with others and to accept critiques from the narrator, monitor, and studio director.
- Sensitivity to the difficulties involved in translating a printed text to spoken communication, and an artistic appreciation of the written and spoken word.
- Fluency in the language in which the text is printed.
- Ability to use dictionaries and other reference sources.

Responsibilities

- Reviewing recordings in their entirety for artistic and technical quality.
- Verifying that side announcements, duration of sound tracks, and record level comply with established procedures.
- Verifying that sound tracks are free from any audible disturbance.
- Noting mispronunciations, omissions, substitutions, and transpositions.
- Verifying consistency of characterization, pronunciation, and narration style; and noting changes in energy level, pacing, recording level, background ambience, and any other audible characteristic.
- Making observations on artistic and technical qualities of the recording that could be improved, but do not require correction.

Billy R. West
Washington, D.C.
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